

▪ SEMESTER:- III

▪ COURSE NO.:- FST-235

▪ COURSE TITLE:- LEGUME AND OILSEED TECHNOLOGY

▪ CREDITS:- 3(2+1)

➤ THEORY

NO. OF UNITS	TOPICS	NO. OF LECTURES
1	<i>Present status and future prospectus of legumes and oil seeds morphology of legume and oilseeds</i>	3
2	<i>Classification and types of legumes and pulses. Chemical composition and nutritional value. Antinutritional factors, their chemistry, methods of removal of antinutritional factors</i>	4
3	<i>Processing of legumes of home scale, cottage scale and commercial methods of dehulling. Modern techniques in dehulling. Processing of red gram, bengal gram, green gram, black gram.</i>	4
4	<i>Dal milling – principles, methods, equipments and effect on quality. Principle products, dry and wet milling of pulses, fermented products of legumes</i>	2
5	<i>Soaking – principles, methods of soaking - sprouting, puffing, roasting and parboiling of legumes, physical and bio-chemical changes during these processes</i>	4
6	<i>Cooking quality of dal – methods, factors affecting quality of dal and cooking of dal. quick cooking dhal, instant dal.</i>	2
7	<i>Introduction, present and future prospects of oil seeds, chemical composition and characters of oil seed and oils, antinutritional factors, elimination methods</i>	3
8	<i>Post harvest technology of oil seeds, handling drying, storage, grading, pretreatments, cleaning, dehulling, size reduction and flaking</i>	2
9	<i>Oil extraction: traditional methods, ghani, power ghanis, expellers –principle of expeller, structure design of expeller.</i>	2
10	<i>Solvent extraction process : principle, pretreatment - breaking, cracking, flaking. extraction principle, factors affecting the extraction process. Desolventization</i>	2
11	<i>Refining of oils – degumming, neutralization, bleaching, filtration, deodorization, their principles and process controls.</i>	2
12	<i>New technologies in oil seed processing, utilization of oil seed meals of different food uses. high protein product like protein concentrate and isolates</i>	2
	TOTAL	32

➤ PRACTICALS

NO. OF UNITS	TOPICS	NO. OF EXPT.
1	<i>Physical properties of legumes and oil seeds</i>	1
2	<i>Estimation of protein</i>	1
3	<i>Estimation of fat</i>	1
4	<i>Methods and principles of dehulling</i> a) <i>application oil</i> b) <i>application red earth slurry.</i>	1
5	<i>Dal milling process.</i>	2
6	<i>Antinutritional factors, methods of elimination.</i>	2
7	<i>Soaking studies, kinetics.</i>	2
8	<i>Sprouting of legumes.</i>	1
9	<i>Cooking quality of dal</i>	1
10	<i>Fermented product of legumes- dosa, idli, wada, dhokala, etc.</i>	2
11	<i>Extraction of oil by expeller press</i>	1
12	<i>Production of protein rich product.</i>	1
13	<i>Visit to dal mill and oil extraction plant.</i>	1
	TOTAL	17

➤ *Reference Books:*

- *Post Harvest Biotechnology of Legumes* *D.K. Salunkhe et al.*
- *Post Harvest Biotechnology of Oil Seed* *D.K. Salunkhe et al.*
- *Processed Protein Food Stuff* *A.M. Alschule*
- *The Chemistry and Technology of Edible Oils and Fat* *A.E. Baily*
- *Post Harvest Technology of Cereals, Pulses and Oil seeds* *Chakraborty*
- *Oil Seed Processing Technology* *B.D. Shukla*